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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,952	10/22/2001	Derek S. Hilborn	12177/22101	8216
23838	7590	12/28/2004	EXAMINER	
KENYON & KENYON 1500 K STREET, N.W., SUITE 700 WASHINGTON, DC 20005			CHANG, EDITH M	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/982,952	Applicant(s) HILBORN ET AL.	
	Examiner Edith M Chang	Art Unit 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-20 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>052404</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 1, 2 and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 3 and 9-20 are objected to because of the following informalities:

Claim 3, Claim 11 & Claim 17, line 2: "a filter" is suggested changing to "the filter", "a length" is suggested changing to "a length of the span".

Claim 9, line 4: "the" is suggested changing to "the received".

Claim 15, line 7: "the" is suggested changing to "the received".

Claims 10, 12-14, 16 and 18-20 are directly or indirectly dependent on objected claims 9 and 15.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 9-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claim 9 is a single mean claim wherein the apparatus comprises a single element, the controller. The claims 10-14 are dependent on the rejected claim 9.

A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 10-12 and 15-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 10-12, line 1: "The apparatus of claim 9, wherein said step" is undefined since the apparatus comprises elements, does not comprise said step.

Claim 15 is an apparatus claim of a digital transmission system. The digital transmission system comprises a transmitter and a receiver including a controller. In the claim 15, it does not clearly indicate any connection or relation between the transmitter and the receiver with the comprised controller, wherein the step of the comprised controller performs uses a matched filter which is undefined in the receiver, and it does not clearly indicate that how does a controller programmable filtering the signal envelope using a matched filter and what is the connection/relation of the matched filter with the controller of the receiver. Hence the claim 15 fails to particularly point out and distinctly claim the subject matter regarding the invention.

Claims 16-18, line 1: "The apparatus of claim 15, wherein said step" is undefined since the apparatus comprises elements, does not comprise said step.

Claims 19-20 are directly or indirectly dependent on rejected claim 15.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, 5-11, 13-17 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Seki et al. (US 5,602,835).

To **claims 1, 9 & 15**, Seki teaches the device and its method for attaining synchronization in a digital transmission system in FIG. 1 with the transmitter device 2 and the receiver device 7, FIG.5 with the detail of the receiver device, and ABSTRACT lines 22 to 28.

In FIG.5 the circuit of the receiver device:

receiving a digital signal shown in FIG. 6(a) with guard period and available symbol period from input 31 according to the OFDM modulation (OFDM modulator 2 of FIG.1);

determining the amplitude/envelope of the digital signal shown in FIG. 6(c) by the correlators 53 and 54;

filtering the digital envelope by the symbol sync detector 50 using the filtering circuit which is the guard timing detector 55 (details in FIG.12, comprising square circuit, filter, peak extractor, judging circuit, and flywheel circuit: elements 81 to 87), to provide the guard timing signal shown in FIG. 6(d). As shown in the FIG. 6(c) and FIG. 6(d), the digital signal envelope of FIG. 6(c) is filtered corresponding to the span from the current guard period to the next guard period (e.g. G_0 to G_1 of FIG. 6(d)), hence the filtering circuit have a span corresponding to the guard period to filter the digital signal envelope of FIG.6 (c);

determining the guard period by guard period remover 41 from the guard timing signal FIG. 6(d) (as the time reference) output from the symbol sync detector 50, based on the digital envelope filtered from the guard timing detector (the filtering circuit) 55.

To **claims 2, 10 & 16**, in FIG.5, Seki teaches A/D 40 sampling the received digital data.

To claims 3, 11 & 17, Seki teaches the filtering having a length from the first pulse to the second pulse of the guard timing (shown in FIG. 6(d)) which is approximately equal to the length for the guard period (where is approximately no signal from the end of the down edge of the first triangle pulse to the beginning of the rising edge of the second triangle pulse) of the output from correlator shown in FIG. 6(c).

To claims 5-6, 13-14 & 19-20, Seki teaches the system of FIG. 1 with receiver FIG. 5 is the wireless communication system of a mobile system with remote unit using OFDM stated in column 1 lines 14-20.

To claim 7, Seki teaches the digital signal received through the wireless multipass being lower/weaker than the level set for regular (e.g. wireline) service stated in column 1 lines 14-28, wherein the broadcasting or mobile radio signal is prone to the multiple path interference.

To claim 8, Seki teaches the digital transmission system is one of audio or video broadcasting system stated in column 1 lines 14-17 wherein the broadcasting or mobile radio communication is the audio broadcasting system.

Allowable Subject Matter

9. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claim 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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11. The following is a statement of reasons for the indication of allowable subject matter:

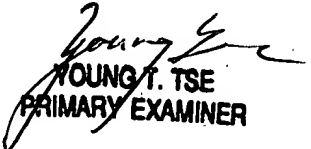
The prior art of record fails to teach or suggest, alone or in a combination, among other things, at least a method for attaining synchronization as a whole, the combination of elements and features, which includes determining the guard period of the received digital signal including determining the minimum level of the filtered signal envelope provided by a matched filter having a span corresponding to the guard period to indicate the center of the guard period.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayanti Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang
December 15, 2004


YOUNG T. TSE
PRIMARY EXAMINER